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(71) Applicant(s)
Mitel Corporation

(Incorporated in Canada - Ontario)

Po Box 13089, 350 Legget Drive, Kanata, Ontario K2K 1X3, Canada

(72) Inventor(s)
Richard Loen
Peter Couse

(74) Agent and/or Address for Service
Venner Shipley & Co
20 Little Britain, LONDON, EC1A 7DH, United Kingdom

(54) A telephone answering system in which the outgoing message is selected using caller line identification

(57) A personalized telephone messaging system, comprising a phonebook database for storing a plurality of names and telephone numbers, a sound manager for recording and storing a default greeting component, a plurality of initial greeting components, and at least one each of a status component and an instruction component of a greeting for incoming callers, a numbers manager for associating predetermined ones of the initial greeting components with associated ones of the plurality of names and telephone numbers stored in the phonebook database, and a software application for searching the phonebook database in the event of an incoming call for a match between one of the plurality of names and telephone numbers and caller line identification associated with the incoming call, and in the event of a match then playing one of the predetermined initial greeting components which matches the caller line identification, followed by the status component and the instruction component of the greeting, and in the event of either no match or no caller line identification being associated with the incoming call then playing the default greeting component, followed by the status component and the instruction component of the greeting.

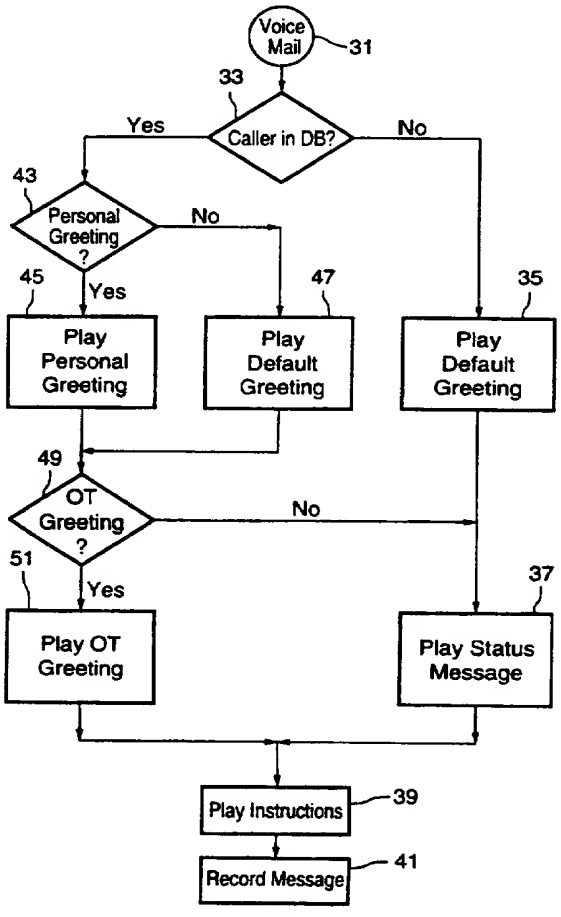

FIG.7

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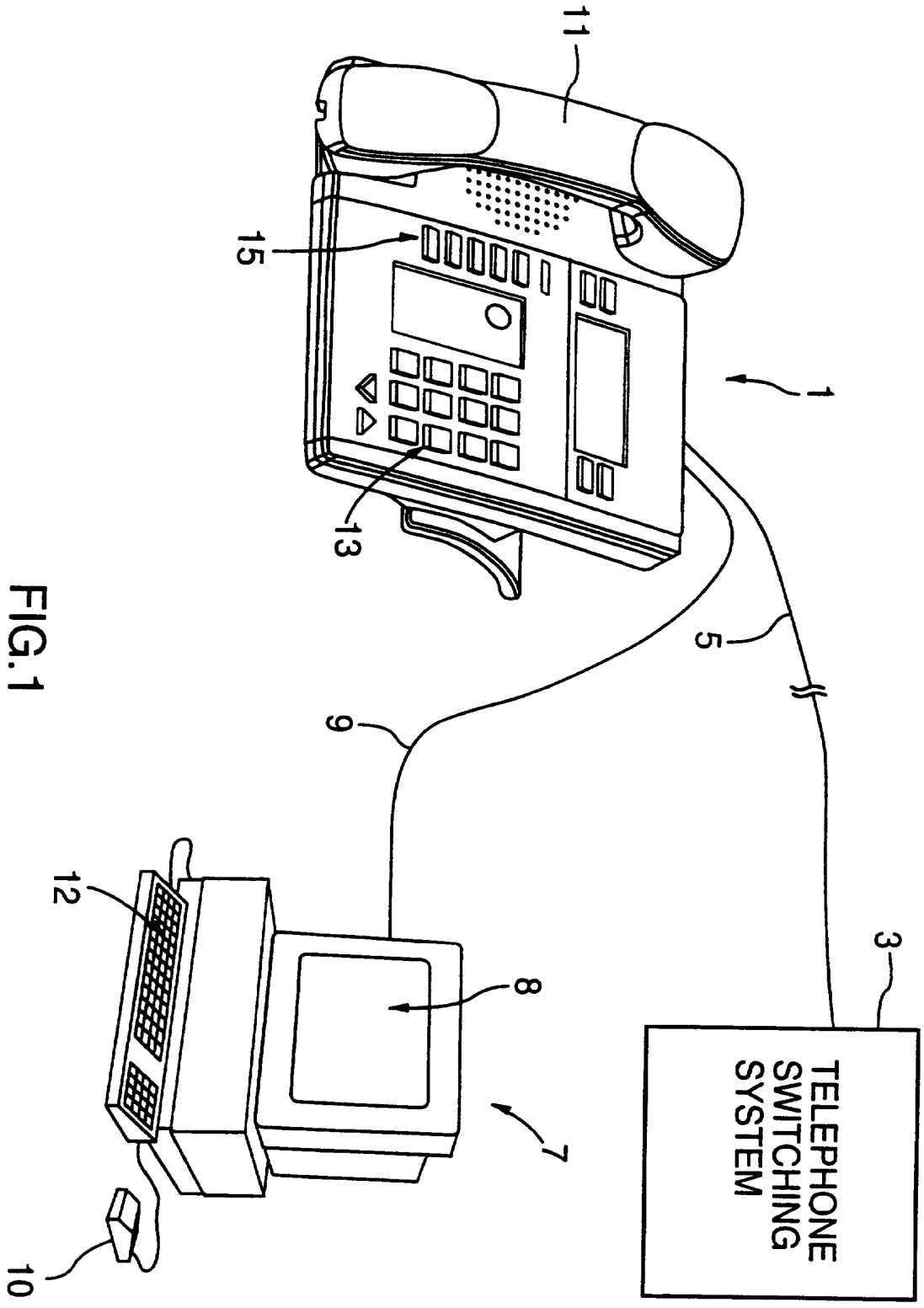

FIG.1

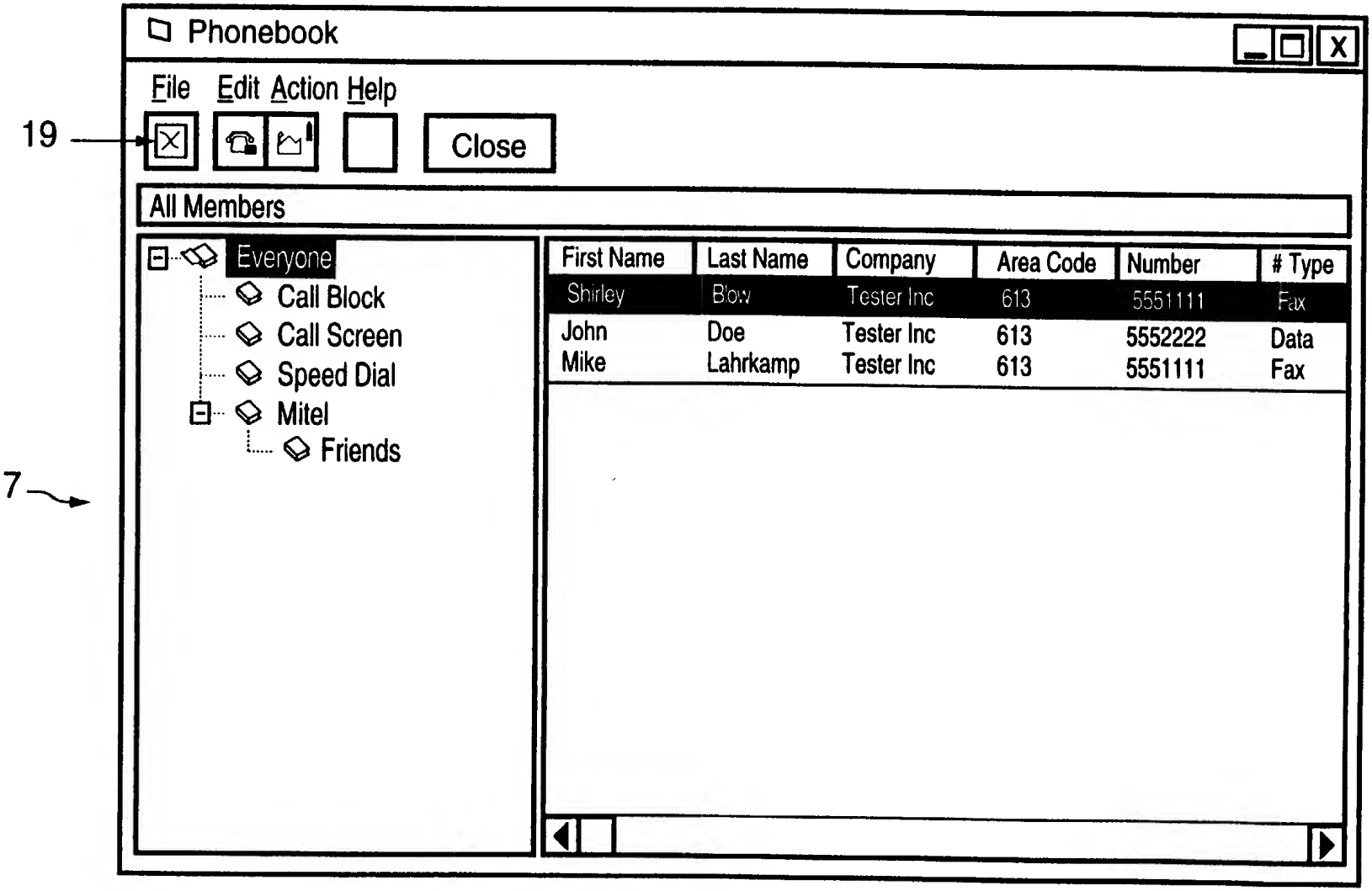
Phonebook
File Edit Action Help
19
Close
All Members
Everyone
Call Block
Call Screen
Speed Dial
Mitel
Friends
17
First Name
Last Name
Company
Area Code
Number
Type
Shirley
Blow
Tester Inc
613
5551111
Fax
John
Doe
Tester Inc
613
5552222
Data
Mike
Lahrkamp
Tester Inc
613
5551111
Fax

FIG.2

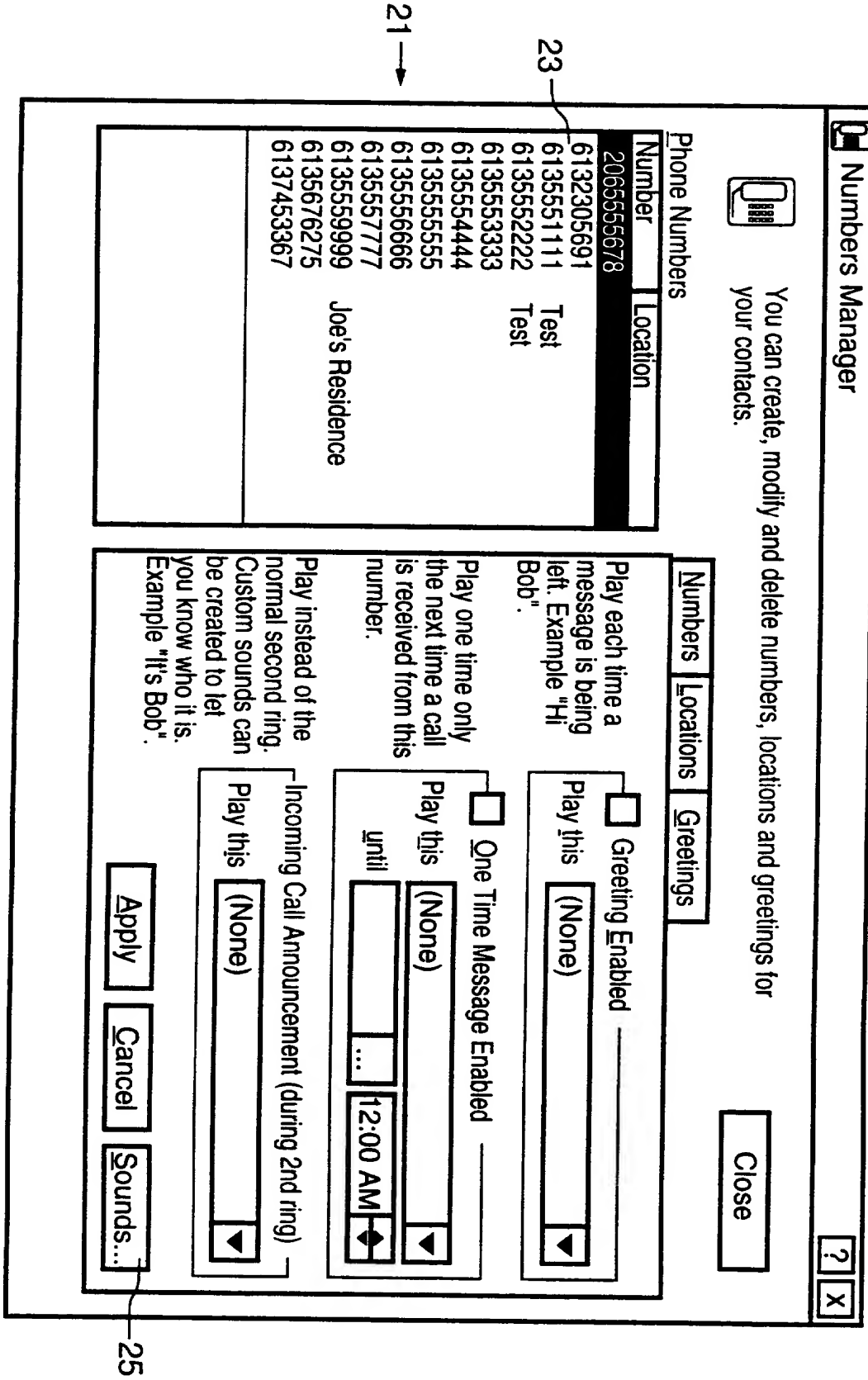
Numbers Manager
You can create, modify and delete numbers, locations and greetings for your contacts.
Close
Phone Numbers
Number
Location
2065555678
6132305691
6135551111 Test
6135552222 Test
6135553333
6135554444
6135555555
6135556666
6135557777
6135559999 Joe's Residence
6135676275
6137453367
Numbers
Locations
Greetings
Play each time a message is being left. Example "Hi Bob".
Greeting Enabled
Play this
(None)
Play one time only the next time a call is received from this number.
One Time Message Enabled
Play this
(None)
until
...
12:00 AM
Play instead of the normal second ring. Custom sounds can be created to let you know who it is. Example "It's Bob".
Incoming Call Announcement (during 2nd ring)
Play this
(None)
Apply
Cancel
Sounds...
21
23
25

FIG.3

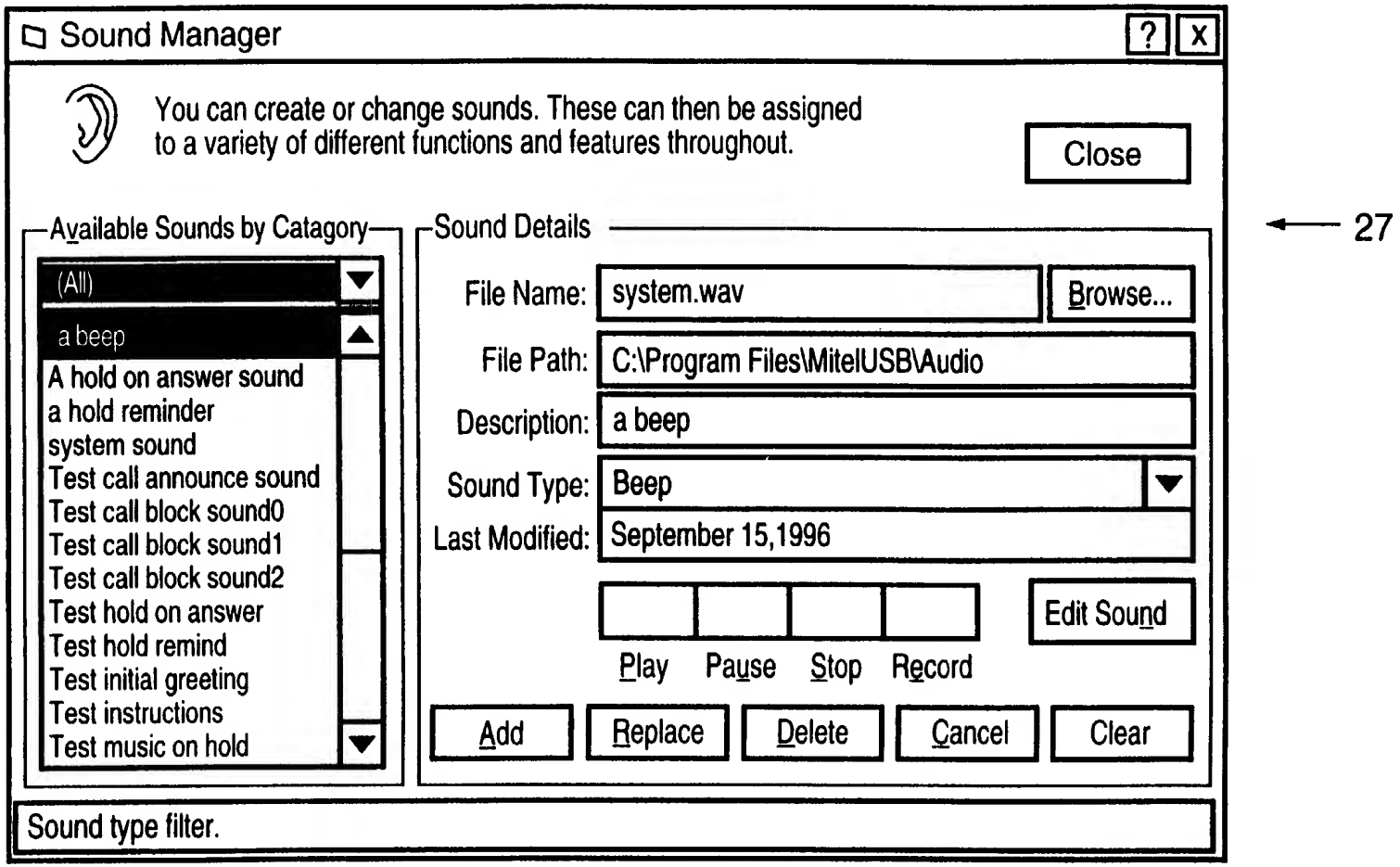
Sound Manager
?
X
You can create or change sounds. These can then be assigned to a variety of different functions and features throughout.
Close
Available Sounds by Catagory
(All)
a beep
A hold on answer sound
a hold reminder
system sound
Test call announce sound
Test call block sound0
Test call block sound1
Test call block sound2
Test hold on answer
Test hold remind
Test initial greeting
Test instructions
Test music on hold
Sound Details
File Name: system.wav
Browse...
File Path: C:\Program Files\MitelUSB\Audio
Description: a beep
Sound Type: Beep
Last Modified: September 15,1996
Edit Sound
Play
Pause
Stop
Record
Add
Replace
Delete
Cancel
Clear
Sound type filter.
27

FIG.4

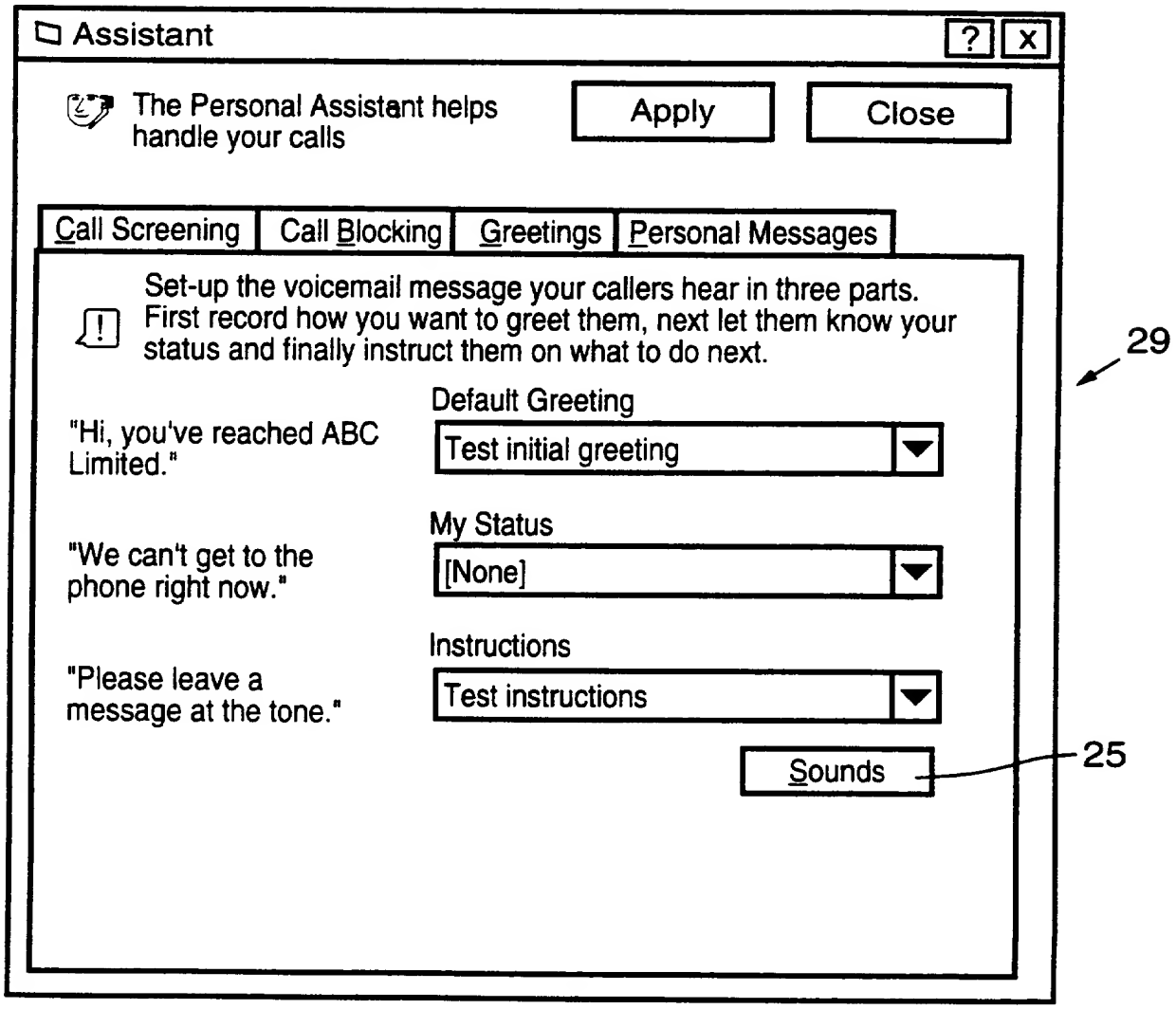
Assistant
?
X
The Personal Assistant helps handle your calls
Apply
Close
Call Screening
Call Blocking
Greetings
Personal Messages
Set-up the voicemail message your callers hear in three parts. First record how you want to greet them, next let them know your status and finally instruct them on what to do next.
29
Default Greeting
"Hi, you've reached ABC Limited."
Test initial greeting
My Status
"We can't get to the phone right now."
[None]
Instructions
"Please leave a message at the tone."
Test instructions
Sounds
25

FIG.5

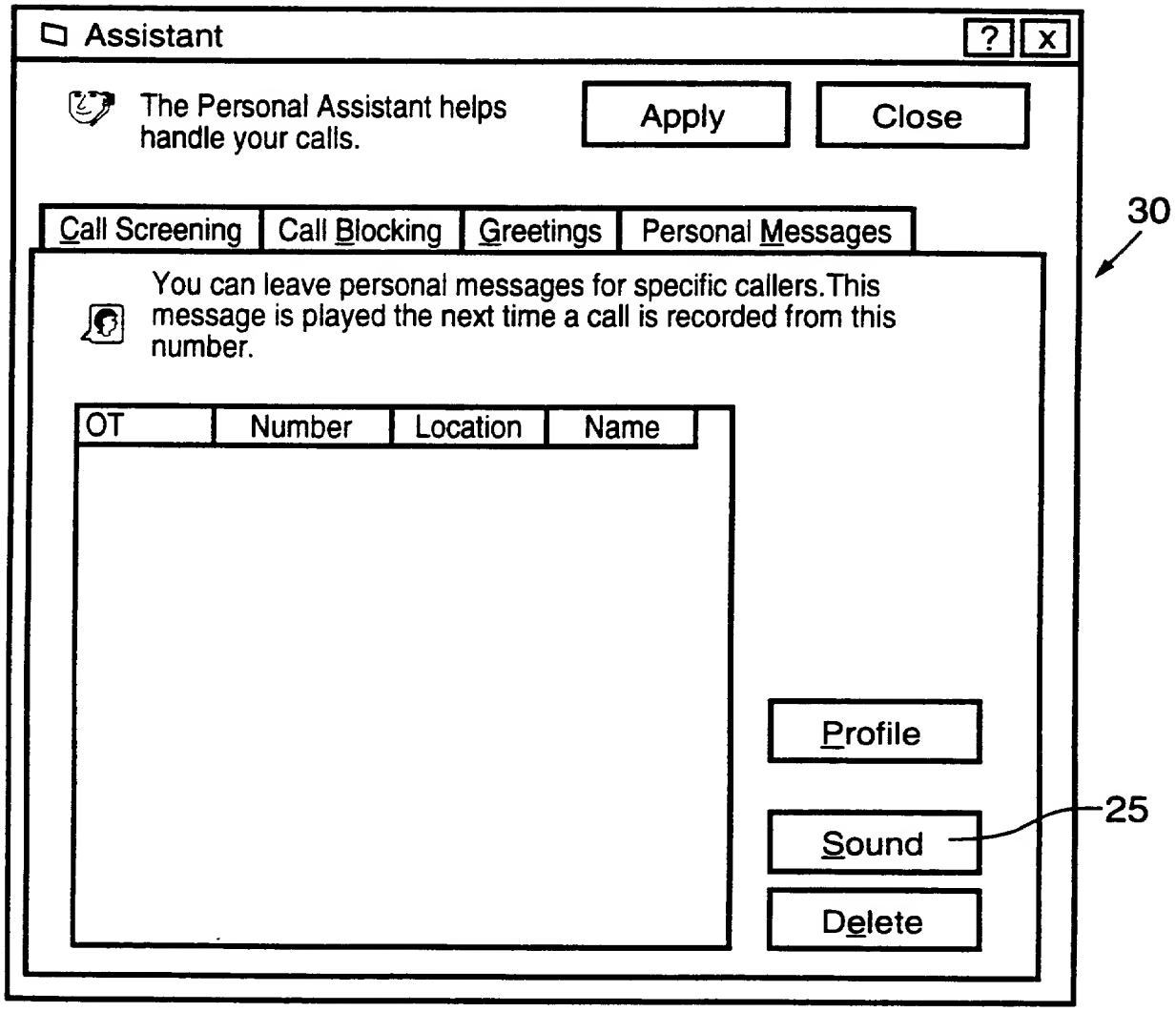
Assistant
?
X
The Personal Assistant helps handle your calls.
Apply
Close
30
Call Screening
Call Blocking
Greetings
Personal Messages
You can leave personal messages for specific callers.This message is played the next time a call is recorded from this number.
OT
Number
Location
Name
Profile
Sound
25
Delete

FIG.6

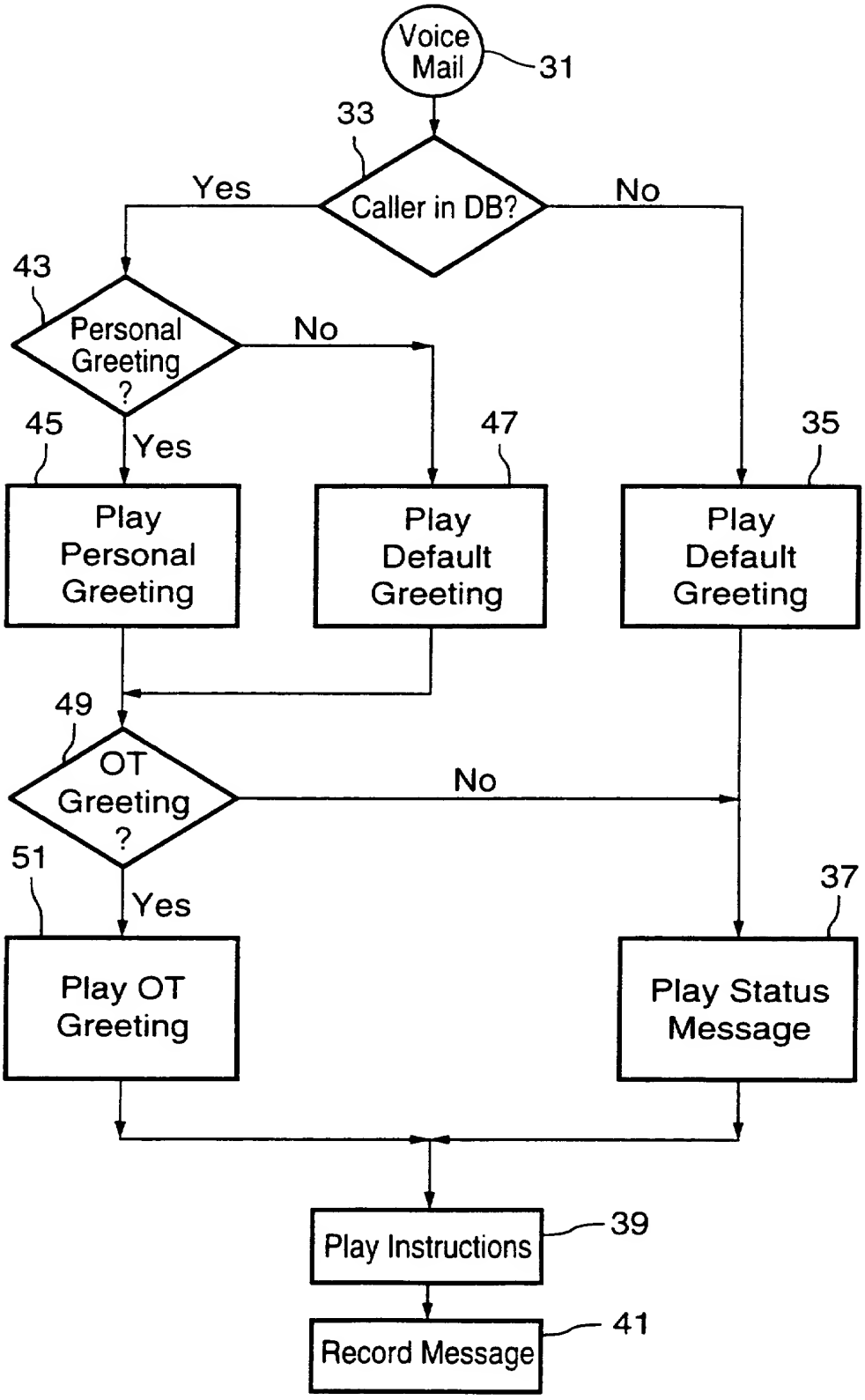
Voice Mail
31
33
Caller in DB?
Yes
No
43
Personal Greeting ?
No
Yes
45
47
35
Play Personal Greeting
Play Default Greeting
Play Default Greeting
49
OT Greeting ?
No
51
Yes
37
Play OT Greeting
Play Status Message
Play Instructions
39
Record Message
41

FIG.7

CUSTOMIZED TELEPHONE GREETING SYSTEM

Field of the Invention

The present invention relates in general to telephone voicemail systems, and more particularly to a novel voicemail system which allows a user to create a customized message for each caller.

Background of the Invention

Telephone messaging and answering systems have been in existence for many years. Early systems utilized a pair of magnetic audio tapes and associated recording/playback heads which allowed a user to record a single greeting on a first one of the tapes (configured as a tape loop), and to record incoming messages on the second tape after a predetermined number of rings. More recent telephone answering systems utilize digital recording and storage media to allow the user to record a greeting and incoming messages. Although newer digital voicemail systems are much more sophisticated than prior art tape-based systems, and allow for longer message recording times, the principle of operation is the same.

With Caller Line Identification (CLID) now provided as a standard central office feature on analog lines, telephone subscribers are growing accustomed to answering incoming calls with a suitable greeting based on their knowledge of the identity of the incoming caller. In many situations, it would be desirable to provide a telephone voicemail system which is similarly capable of delivering a customized message to an incoming caller based on CLID information received from the central office.

Accordingly, it is an object of the present invention to provide a user customized telephone voicemail system which is capable of providing a personalized message to an incoming caller prior to recording a message from the caller or prior to the subscriber answering the call.

Summary of the Invention

According to the present invention, a system is provided by which a telephone subscriber may create a personalized message for incoming callers based on the caller's CLID. According to a preferred embodiment of the invention, the message comprises three components which are assembled by the user via a proprietary software application. The first component is a personalized greeting (e.g. "Hi Bob"), the second component advises the caller of the user's status (e.g. "I'm out of the office now"), and the last component is an instruction (e.g. "Please leave a message").

A phonebook database is maintained with the names and numbers of callers known to the subscriber. The three components are recorded by the subscriber and stored as wave files (.WAV), wherein the first component is associated with individual entries in the phonebook database.

For an unidentified caller (i.e. no CLID or caller not yet stored in phonebook database), a generic first component may be provided (e.g. "Hello, this is Anne").

Upon receipt of an incoming call with CLID, the software application searches the phonebook database for a match between the CLID and the stored name and/or number. In the event of a match, the system then plays the three stored wave files in sequence so that a personalized message is played to the incoming caller.

According to the preferred embodiment, a one-time message may be recorded for any caller, which is played only once and expires at a specific time in the event that the expected caller does not call.

Brief Introduction to the Drawings

A detailed description of the preferred embodiment is provided herein below, with reference to the following drawings, in which:

Figure 1 is a schematic illustration of a computer-based telephony system capable of implementing the customized messaging system of the present invention;

Figure 2 shows a Phonebook database window interface generated by the application according to the preferred embodiment;

Figure 3 shows a Numbers Manager window interface generated by the application according to the preferred embodiment;

Figure 4 shows a Sounds Manager window interface generated by the application according to the preferred embodiment;

Figure 5 shows the Greetings tab of an Assistant window interface generated by the application according to the preferred embodiment;

Figure 6 shows the Personal Messages tab of the Assistant windows interface generated by the application according to the preferred embodiment; and

Figure 7 is a flowchart showing operation of the software application according to the preferred embodiment.

Detailed Description of the Preferred Embodiment

Turning to Figure 1, a PC-based telephony system is shown which is capable of implementing the personalized greeting application of the present invention. A telephone set 1 is connected to a telephone switching system 3 (e.g. central office) via a telephone line 5. The telephone set 1 is also connected to a personal computer 7 via a serial link 9. The personal computer 7 includes a monitor or display 8 as well as a mouse pointer 10 and keyboard 12, in a well known manner. The serial link may be

one of either a USB or RS-232 line, although other suitable data communication links are possible. The computer 7 executes a TAPI (Telephony Application Program Interface) compliant software application for communicating with the telephone set 1 to implement various telephony functions, including the messaging system of the present invention. The TAPI application permits shared and interactive functionality between the computer 7 and telephone set 1 for implementing the personalized greeting system of the present invention and further including, but not limited to, call management, call logging, call recording, phonebook database creation and editing, and dialling, none of which form part of the present invention and all of which are discussed in greater detail with reference to the assignee's copending application no. _____ filed _____, and entitled System for Interactive Control of Computer and Telephone, the contents of which are incorporated herein by reference.

The telephone set 1 includes a handset 11 and keypad 13, and in addition includes a plurality of programmable function keys 15 which may be programmed for speed dial or other telephony functions.

As indicated above, the software application running on computer 7 communicates with telephone set 1 via serial link 9. In accordance with the principles of the present invention, the software application implements the personalized greeting system of the present invention via a plurality of user interface components for display and sound recording/playback functionality.

In Figure 2, a Phonebook database window 17 is generated by the software application for providing a GUI interface for the user to enter and edit information relating to the user's business and personal contacts. The Phonebook database is analogous to a Personal Information Manager (PIM). The Phonebook database window 17 includes a directory (left-hand side) which is created by the user and may include numerous sub-directories. For each Phonebook database entry, a First Name, Last Name, Company Name, Area Code, Number and #Type field are provided. Toolbar buttons 19 are included to perform well known functions such as delete, dial,

open profile (each entry in the database has a profile associated with it, containing additional data), and close. Names can be dragged from the table or list display to any directory group using the mouse 10.

In Figure 3, a Numbers Manager window 21 is shown with which the subscriber is able to create, modify and delete numbers, locations and greetings for individual names appearing in the Phonebook database (Figure 2). Only the greetings tab of window 21 is shown in Figure 3, the Numbers and Locations tabs not being shown since they are not directly relevant to the present invention. Using the Greetings tab of the Numbers Manager window 21, the user is able to select a greeting (i.e. the first of three message components) which is associated with a particular number (shown highlighted in table 23), select and program a one-time message, and play a custom sound (i.e. incoming call announce) on second ring to identify the caller. The initial greeting, one-time message and incoming call announce sounds are all stored as wave files which can be created and edited via a Sound Manager function which is accessed by clicking the Sounds button 25.

Specifically, upon clicking the Sounds button 25, a further user interface window is displayed as shown in Figure 4. The Sound Manager window 27 allows the user to record and edit sounds, with available sounds being selected from a drop-down list. Thus, the subscriber may record a personalized greeting (e.g. "Hi Bob") or a one-time greeting (e.g. "Hi Dana, I'm running late for our meeting but should be there by 3:00 PM. In the meantime please leave me with your email address"), and store the recorded wave file under a predetermined file name which can then be selected via the greeting and one-time message fields in the Numbers Manager window (Figure 3).

Boxes are provided in the Numbers Manager window 21 (Figure 3) for enabling or disabling the personalized greeting and one-time message associated with a particular number. Also, with respect to the one-time message, an expiry date must be entered in the "until" field and a time, after which the one-time message for a particular caller will be automatically disabled.

As discussed briefly above, each message comprises a customized combination of three components: a personalized greeting, the user's status and an instruction. The user creates this combination of components using the Assistant window interface 29 of Figure 5. Only the Greetings tab of window 29 is shown in Figure 5, the Call screening and Call blocking tabs are not shown since they are not directly relevant to the present invention, and the Personal Messages tab is discussed below with reference to Figure 6. Within the window interface 29, the user is able to select a Default Greeting (e.g."You have reached ABC Limited"), a Status message (e.g. "We can't get to the phone right now") and an Instructions message (e.g. "Please leave a message at the tone"). Each of these messages must have been recorded and stored as wave files using the Sound Manager window interface 27 (Figure 4).

As discussed above, where there is no match between the incoming caller's CLID and the numbers stored in the user's Phonebook database, then the Default Greeting is played. Otherwise, the personalized greeting selected for the identified incoming caller is played as the first component of the message (the personalized greeting having been recorded as a wave file using the window 27 (Figure 4) and assigned to the number in the Phonebook database using the Numbers Manager window 21 (Figure 3)).

As shown in Figure 6, a list of one-time messages is provided under the Personal Messages tab 30 of the Assistant window interface. The list is arranged according to message (OT), number, location and name. Any one of these messages may be selected in the list and then edited using the Sounds button 25, as discussed above.

In operation, with reference to the flowchart of Figure 7, upon receipt of an incoming telephone call with voicemail activated (step 31), the application causes a "phone ringing" sound to be played at the appropriate local speaker device. If a "caller ID data received" notification is received by the application, the caller ID data is stored with the call's object. The application then searches the Phonebook database for a match in stored telephone number with the identified telephone number of the

calling party (step 33) . In the event of no match being found, the default greeting is played to the caller (step 35), followed by the status message (step 37), instructions message (step 39) and recording of the caller's message (step 41).

In the event of a match between the CLID information and a number in the phonebook database, the application retrieves the file name of the personalized greeting to be played to the caller and also obtains the name of a file to which the voice mail message can be saved. If no personalized greeting has been stored for the indicated caller (step 43), the default greeting file is retrieved. The application first plays the personalized greeting (step 45) or the default greeting (step 47), depending on the outcome of step 43, to the appropriate line device. Next, the application determines whether an unexpired one-time message has been recorded for the identified caller (step 49). If yes, then the application retrieves the file name of the one-time message to be played to the caller and also obtains the name of the file to which the voice mail message can be saved. These two file names are then passed to a media message control component of the application which plays the one-time message (step 51), followed by the instructions message 39 and then records any message left by the caller (step 41).

If no one-time message is located as a result of step 49, then the status message is played (step 37), followed by the instructions message (step 39) and recording of the caller's message (step 41).

According to one alternative embodiment, step 49 may be executed before step 43 so that in the event that a one-time greeting is located for a particular caller, steps 43 through 47 are bypassed.

According to another alternative embodiment, a schedule of status messages may be selected to be played at predetermined times and dates. For example, a standard status message may be programmed to play from 9:00 AM to 12 Noon (e.g."We're not available to take your call right now"), at which time the status message changes to a lunchtime message (e.g. "We're out for lunch right now"),

and after the lunch hour the standard message can be played again until 6:00 PM at which time a night status message can be played (e.g. "The office is now closed, but will re-open at 9:00 AM").

In summary, according to the present invention a personalized greeting system is provided by which a telephone subscriber may create customized messages for incoming callers. The system searches a stored Phonebook database for a match between CLID information from an incoming call and a number in the database. Where a match is found and the user has recorded a personalized greeting, the personalized greeting is played to the incoming caller followed by a status message and instructions, after which the caller has the opportunity of leaving a message. A schedule of status messages may be programmed to automatically change at different times and/or dates. Also, the user can record a one-time customized message for any caller, in place of the personalized greeting. The one-time message is played only once and expires after a programmable time period in the event that the caller does not call.

Other embodiments and variations are possible without departing from the sphere and scope of the invention as defined by the claims appended hereto.

WE CLAIM:

1. A personalized telephone messaging system, comprising:

a) a phonebook database for storing a plurality of names and telephone numbers;

b) a sound manager for recording and storing a default greeting component, a plurality of initial greeting components, and at least one each of a status component and an instruction component of a greeting for incoming callers;

c) a numbers manager for associating predetermined ones of said initial greeting components with associated ones of said plurality of names and telephone numbers stored in said phonebook database; and

d) application means for searching said phonebook database in the event of an incoming call for a match between one of said plurality of names and telephone numbers and caller line identification associated with said incoming call, and in the event of a match then playing one of said predetermined initial greeting components which matches said caller line identification, followed by said status component and said instruction component of said greeting, and in the event of either no match or no caller line identification being associated with said incoming call then playing said default greeting component, followed by said status component and said instruction component of said greeting.

2. The personalized telephone messaging system of claim 1, wherein said sound manager further records and stores a plurality of one-time greetings, said numbers manager further associates predetermined ones of said one-time greetings with predetermined ones of said plurality of names and telephone numbers stored in said phonebook database, and said application means plays said one-time greetings instead of said predetermined initial greeting component and status component in the event of a match between said caller line identification and any one of said predetermined ones of said plurality of names and telephone numbers.

3. The personalized greeting system of claim 2, wherein said numbers manager further associates a time period with each of said one-time greetings after

which said application means no longer plays said one-time greeting instead of said predetermined initial greeting component and status component.

4. The personalized greeting system of claim 1, wherein said application means associates a playing time schedule for each said status component and plays said status component of said greeting based on said schedule.

The Patent Office

Application No:	GB 9719903.8	**Examiner:**	Peter Slater
Claims searched:	1-4	**Date of search:**	19 February 1998

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.P): H4K (KBHE , KF50C)

Int Cl (Ed.6): H04M 1/57 , 1/64 , 1/65 , 3/50

Other: ONLINE: WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
A	EP 0567135 A1 (NEC)	1
A	EP 0455912 A2 (AT&T)	1
A	US 4985913 A (SHALOM)	1

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.